Vol. 12, 1971

Enzymologia Biologica et Clinica

Journal of Enzyme Physiology and Pathology

Editors

J. Frei, Lausanne
W. E. Knox, Boston, Mass.

Editorial Board

H. Aebi, Bern
H.-U. Bergmeyer, Tutzing
Th. Bücher, München
N. Dioguardi, Milano
O. Greengard, Boston, Mass.
B. Hess, Dortmund
F. Leuthardt, Zürich
G. W. Löhr, Marburg
H. Mattenheimer, Chicago, Ill.
H. v. Mayersbach, Hannover
A. Micheli, Genève
R. Richterich, Bern
E. Rossi, Bern
M. Roth, Genève
G. Schapira, Paris
F. W. Schmidt, Hannover
A. Vannotti, Lausanne
L. Villa, Milano
O. Wieland, München
J. H. Wilkinson, London

S. Karger · Basel · München · Paris · London · New York · Sydney

S. Karger · Basel · München · Paris · London · New York · Sydney
Arnold Böcklin-Strasse 25, CH-4011 Basel (Switzerland)

All rights, including that of translation into other languages, reserved.
Photomechanic reproduction (photocopy, microcopy) of this book or parts thereof without special permission of the publishers is prohibited.

Printed in Switzerland by Werner & Bischoff AG, Basel
Blocks: Aberegg-Steiner & Cie AG, Bern

Contents

Abadi, D. M. and *Mortvedt, D. G.:* Inhibition of Hydrolysis of Chondromucoprotein by Plasma Proteolytic Inhibitor 41
Alessio, L.: see Secchi, G. C.
Anghileri, L. J.: The Effects of Acid and Alkaline Phosphatases on Sodium Polyphosphates 70
Anghileri, L. J. and *Miller, Esther S.:* The Enzymatic Hydrolysis of Polyphosphates in Tumor Tissue. Its Influence on the *in vivo* Uptake 449
Aurich, H.: see Luppa, D.
Baron, D. N.: see Rajasingham, Ranee
Baron, P.; Griffaton, G. and *Lowy, R.:* Metabolic Inductions in the Rat after an Intraperitoneal Injection of Fructose and Glucose, According to the Nature of the Dietary Carbohydrate. II. Modifications after Seven Months of Diet 481
Bârzu, O.; Benga, G.; Mureşan, L.; Dancea, S. and *Tilinca, R.:* Study of Respiratory Chain in Small Amounts of Biological Materials. I. Stability and Enzymatic Properties of Liver Mitochondria in Diluted Suspensions ... 433
Bârzu, O.; Mureşan, L.; Dancea, S.; Tărmure, C.; Jebeleanu, G. and *Benga, G.:* Study of Respiratory Chain in Small Amounts of Biological Materials. II. Involvement of Exogenous Cytochrome C in the Oxidation of Ascorbic Acid in the Terminal Segment of the Respiratory Chain 626
Belfield, A. and *Goldberg, D. M.:* Revised Assay for Serum Phenyl Phosphatase Activity Using 4-Amino-Antipyrine 561
Bell, Joyce, L.: see Rajasingham, Ranee
Bellobuono, A.: see Idéo, G.
Benga, G.; Tărmure, Cornelia and *Hodârnău, Adriana:* The Determination of Proteins in Lipid-Rich Mitochondrial Suspensions 574
Benga, G.: see Bârzu, O.
Bieth, J.; Metais, P. and *Warter, J.:* Detection and Determination of α_2-Macroglobulin Trypsin Activity in Pleural Fluids and Ascites 13
Blanchaer, M. C.: see Wrogenmann, K.
Blum, C.: see Vergnes, H.
Bojji Reddy, N.: Aminotransferase Activity in Denervation Atrophy of the Amphibian Skeletal Muscle 578
Budillon, G.; Vecchio-Blanco, C. del and *Coltorti, M.:* Enzymatic Aspects of Histidine Metabolism in Liver Tissue 329
Buletza, G. F. Jr. and *Quay, W. B.:* Microfluorometry of Brain Trypsin-Like Activity and Trypsin Inhibition with N-Carbobenzoxydiglycyl-L-arginine-2-naphtylamide (GGANA) 311
Cao, A.; Virgiliis, S. de; Lippi, C. and *Coppa, G.:* Serum and Muscle Creatine Kinase Isoenzymes and Serum Aspartate Aminotransferase Isoenzymes in Progressive Muscular Dystrophy 49
Cao, A.: see Tangheroni, W.
Castaigne, F.: see Mialhe, H.

Churý, Z.: Lactate Dehydrogenase Isoenzymes in the Aorta in Progeria-Like Syndrome in Rats 273
Cocucci, C.: see Idéo, G.
Collins, R. K.: see Yip, M. C. M.
Coltorti, M.: see Budillon, G.
Coppa, G.: see Cao, A.
Coppa, G.: see Tangherioni, W.
Dancea, S.: see Bârzu, O.
Deinhardt, F.: see Möhr, J. R.
Delain, Danielle: see Schapira, Fanny
Del Ninno, E.: see Idéo, G.
Dioguardi, N.: see Idéo, G.
Fabian, E.: see Štork, A.
Fabianová, J.: see Štork, A.
Felt, V. and *Vaněček, M.:* Influence of Experimental Hypertension on Cholesterol Esterification and Hydrolysis of Cholesterol Esters in Rat Aortae, Liver and Serum 674
Fornerod, M.: see Jemelin, M.
Franchis. R. de: see Idéo, G.
Frei, J.: see Jemelin, M.
Frei, J.: see Okolicsanyi, L.
Furbetta, M.: see Tangheroni, W.
Gakis, C.: see Giusti, G.
Gancedo, C.: see Hernández-Jodra, M.
Gibiński, K. and *Trusz-Gluza, M.:* A New Evidence of Plasma Protein Digestion by Leukocytes 117
Giusti, G. and *Gakis, C.:* Temperature Conversion Factors, Activation Energy, Relative Substrate Specificity and Optimum pH of Adenosine Deaminase from Human Serum and Tissues 417
Goldberg, D. M.: see Belfield, A.
Gonick, H. C.: see Kramer, H. J.
Gordon, Maureen; Wells, H. and *Segal, S.:* Enzymes of the Sugar Nucleotide Pathway of Galactose Metabolism in Chick Liver 513
Greengard, O.: see McGee, M.
Griffaton, G.: see Baron, P.
Haefeli, L.: see Reinharz, A.
Hanzlickova-Leroux, A.: see Kaplan, J.-C.
Hernández-Jodra, M. and *Gancedo, C.:* Isoenzymes of Alkaline Phosphatase in Human Meconium and Small Intestine during Development 682
Hill, P. G. and *Sammons, H. G.:* The pH Optimum of Human 5-Nucleotidases. 201
Hodârnău, Adriana: see Benga, G.
Hoffman, H. A. and *Rechcigl, M. jr.:* Erythrocyte Catalase in Inbred Mice 219
Holmes, A. W.: see Möhr, J. R.
Idéo, G.; Del Ninno, E. and *Franchis, R. de:* Behaviour of Some Enzymes and Isoenzymes in Plasma Liver and Bile of Rats Treated with Carbon Tetrachloride 242
Idéo, G.; Franchis, R. de; Bellobuono, A. and *Tornaghi, G.:* Aspartate Aminotransferase Isoenzymes in Human Serum in Various Liver Diseases .. 529

Idéo, G.; Franchis, R. de; Del Ninno, E.; Cocucci, C. and *Dioguardi, N.:* Increase of some Rat Liver Microsomal Enzymes as a Consequence of Prolonged Alcohol Intake: Comparison with the Effect of Phenobarbitone 473

Iqbal, M.: Activity of Alkaline Phosphatase and Carbonic Anhydrase in Male and Female Zinc-Deficient Rats 33

Iqbal, K. and *Wu, C.:* Glutamine Synthetase. VIII. Purification and some Properties of the Enzyme from Rat Liver 553

Jacobson, B. E.: see Wrogemann, K.

Jebeleanu, G.: see Bârzu, O.

Jemelin, M.; Fornerod, M.; Frei, J. and *Prod'hom, L. S.:* Impaired Phagocytosis in Leukocytes from Newborn Infants. A Study of Glycolysis and Activities of Phosphoglycerate Kinase and Pyruvate Kinase 642

Kaplan, J.-C.; Hanzlickova-Leroux, A.; Nicolas, A.-M.; Rosa, R.; Weiler, C. and *Lepercq, G.:* A New Glucose-6-phosphate Dehydrogenase Variant (G6PD Port-Royal) 25

Katona, F.: see Nagy, A.

Kaufman, M.; Yip, M. C. M. and *Knox, W. E.:* Glucosamine 6-Phosphate Synthesis in Normal and Neoplastic Rat Tissues 537

Kellen, J. A.: see Lo, J. S.

Kellen, J. A.: see Lustig, V.

King, J.: see McQueen, M. J.

Knox, W. E.; Kupchik, H. Z. and *Liu, Louise P.:* Glutamine and Glutamine Synthetase in Fetal, Adult and Neoplastic Rat Tissues 88

Knox, W. E.: see Kaufman, M.

Knox, W. E.: see McGee, M.

Kramer, H. J. and *Gonick, H. C.:* Studies of Human Kidney and Urine Acid Phosphatase II. Measurements of Urinary Enzyme Activity in Renal Disease 257

Kupchik, H. Z.: see Knox, W. E.

Lacroix, Yen: see Schapira, Fanny

Lepercq, G.: see Kaplan, J.-C.

Lippi, C.: see Cao, A.

Liu, Louise P.: see Knox, W. E.

Lo, J. S. and *Kellen, J. A.:* Demonstration of the Subunit Structure of Human Placental Alkaline Phosphatase by Isoelectric Focusing 635

Lo, J. S. and *Kellen, J. A.:* Spontaneous Partial Reactivation of Chelated Placental Alkaline Phosphatase in the Absence of Zinc 606

Lowy, R.: see Baron, P.

Lundquist, I.: Method for Determination of Acid Amyloglucosidase in Isolated Islets of the Pancreas 647

Lungarotti, S.; see Tangheroni, W.

Luppa, D. and *Aurich, H.:* Polarographic Determination of L-Amino Acid Oxidase Activity Using a Vibrating Platinum Electrode 688

Lustig, V. and *Kellen, J. A.:* The Ultrastructural Localization of Alkaline Phosphatase Isoenzymes in Some Normal and Malignant Cells 76

Magnenat, P.: see Okolicsanyi, L.

Massarrat, S.: Alkaline Phosphatase in the Subcellular Fractions of Normal and Damaged Human Liver 402

Massarrat, S. and *Massarrat, Sch.:* Origin of Serum Alkaline Phosphatase in Hepatobiliary Diseases. A Metabolic Study 593
Massarrat, Sch.: see Massarrat, S.
Mattenheimer, H.: see Möhr, J. R.
McGee, M.; Greengard, O. and *Knox, W. E.:* The Developmental Formation of Asparaginase in Liver and its Distribution in Rat Tissues..... 1
McQueen, M. J. and *King, J.:* The Reduction of Hydroxypyruvate by Human Serum 523
Metais, P.: see Bieth, J.
Mialhe, H.; Castaigne, F. and *Tuong, C. C.:* Mode of Action of Two Spreading Factors of Testicular and Bacterial Origin. I. Reductimetry 355
Mialhe, H.; Castaigne, F. and *Tuong, C. C.:* Mode of Action of Two Spreading Factors of Testicular and Bacterial Origin. II. Splitting of either Purified or Desulphated Sodium Chondroitin Sulphate 362
Mialhe, H.; Castaigne, F. and *Tuong, C. C.:* Mode of Action of Two Spreading Factors of Testicular and Bacterial Origin. III. Study of the Degradation Products 368
Miller, Esther S.: see Anghileri, L. J.
Möhr, J. R.; Mattenheimer, H.; Holmes, A. W.; Deinhardt, F. and *Schmidt, F. W.:* Enzymology of Experimental Liver Disease in Marmoset Monkeys. I. Patterns of Enzyme Activity in Liver, other Organs and Serum of Marmosets, Compared to Man and other Mammals..... 99
Möhr, J. R.; Mattenheimer, H.; Holmes, A. W.; Deinhardt, F. and *Schmidt, F. W.:* Enzymology of Experimental Liver Disease in Marmoset Monkeys. II. Experimental Hepatitis 161
Mortvedt, D. G.: see Abadi, D. M.
Mureşan, L.; see Barzu, O.
Naccarato, R.: see Okolicsanyi, L.
Nagy, A.; Róna, E.; Katona, F. and *Wollemann, M.:* Intracellular Distribution of Lactate Dehydrogenase Isoenzymes in Brain Tumours 467
Nicolas, A.-M.: see Kaplan, J.-C.
Okolicsanyi, L.: Frei, J.; Magnenat, P. and *Naccarato, R.:* Multiplicity and Specificity of UDP-Glucuronyl Transferase. III. UDP-Glucuronyl Transferase and β-Glucuronidase Activities Assayed with Different Substrates in Inherited and Acquired Human Liver Diseases 658
Patelski, J.; Waligóra, Z. and *Szulc,* S.: Investigations of the Aortic Phospholipase A, Lipase and Cholesterol Esterase 299
Pitkänen, E.: The Hydrolysis of Nicotinamide Adenine Dinucleotide Phosphate by Serum Alkaline Phosphatase 226
Prod'hom, L. S.: see Jemelin, M.
Quay, W. B.: see Buletza, G. F.
Rajasingham, Ranee; Bell, Joyce L. and *Baron, D. N.:* A Comparative Study of the Isoenzymes of Mammalian α-Amylase 180
Rechcigl, M. jr.: see Hoffman, H. A.
Reif-Lehrer, Liane: see Thorndike, Janet
Reinharz, Anja and *Roth, M.:* Studies on Pituitary Cathepsin D with Artificial Substrates 458

Reinharz, A.; Roth, M.; Haefeli, L. and *Schaechtelin, G.:* Effect of some Chemical Agents on Renin Activity *in vitro* 212
Róna, E.; see Nagy, A.
Rosa, R.: see Kaplan, J.-C.
Roth, M.: see Reinharz, Anja
Salkie, M. L.: The substrate Specificity of the Glycosaminoglycuronoglycan Degrading Enzymes of Human Serum 409
Sammons, H. G.: see Hill, P. G.
Satoh, T.: Activation of Liver Tryptophan Pyrrolase of Rat by Isocarboxazid *in vivo* 124
Schaechtelin, G.: see Reinharz, A.
Schapira, Fanny; Delain, Danielle and *Lacroix, Yen:* Multiple Molecular Forms of Aldolase in Fetal Liver Cell Cultures: Action of Dexamethasone 545
Schmidt, F. W.: see Möhr, J. R.
Secchi, G. C.; Alessio, L. and *Spreafico, F.:* Serum Enzymatic Activites in Experimental Lead Poisoning 63
Segal, S.: see Gordon, Haureen
Spreafico, F.: see Secchi, G. C.
Štork, A.; Fabian, E. and *Fabianová, J.:* Bile Salts and Lipolysis. The Inhibition of Spontaneous Lipolytic Activity and Hormone-Sensitive Lipase 269
Szulc, S.: See Patelski, J.
Taketa, K.: see Watanabe, A.
Tangheroni, W.; Cao, A.; Coppa, G.; Lungarotti, S.; Virgiliis, S. de; Trabalza, N. and *Furbetta, M.:* Leukocyte Alkaline Phosphatase Isoenzymes in Down's Syndrome 340
Tărmure, Cornella: see Benga, G.
Thorndike, Janet and *Reif-Lehrer, Liane:* A Sensitive Assay for Glutamyltransferase 235
Tilinca, R.: see Bârzu, O.
Tornaghi, G.: see Idéo, G.
Trabalza, N.: see Tangheroni, W.
Trusz-Gluza, M.: see Gibiński, K.
Tuong, C. C.: see Mialhe, H.
Tzvetanova, Elena: Creatine Kinase Isoenzymes in Muscle Tissue of Patients with Neuromuscular Diseases and Human Fetuses 279
Vaněček, M.: see Felt, V.
Vecchio-Blanco, C. del: see Budillon, G.
Vergnes, H. and *Blum, C.:* Variations in Leukocyte and Erythrocyte NADP Oxidoreductases. Activity of Pentose Phosphate Pathway after TSH Administration in Man 289
Vigneron, C.: Electrophoresis of Erythrocyte Galactokinase 426
Virgiliis, S. de: see Cao, A.
Virgiliis, S. de: see Tangheroni, W.
Waligóra, Z.: see Patelski, J.
Warter, J.: see Bieth, J.
Watanabe, A. and *Taketa, K.:* Resolution of Microheterogeneous Forms of Glucose-6-Phosphate Dehydrogenase by Electrophoresis on Cellulose Acetate . 694
Weiler, C.: see Kaplan, J.-C.
Wells, H.: see Gordon, Maureen

Wollemann, M.: see Nagy, A.
Wrogemann, K.; Jacobson, B. E. and *Blanchaer, M. C.:* Nucleic Acids and Lysosomal Hydrolases in the Skeletal Muscle of BIO 14.6 Dystrophic Hamsters 322
Wu, C.: see Iqbal, K.
Yip, M. C. M. and *Collins, R. K.:* Purification and Properties of Rat Kidney and Liver Ornithine Aminotransferase 187
Yip, M. C. M.: see Kaufman, M.

Short Reviews

Alpers, J. B.: see Paulus, H.
Paulus, H. and *Alpers, J. B.:* Preconditioning: An Obligatory Step in the Biosynthesis of Oligomeric Enzymes and its Promotion by Allosteric Ligands 385
Thorpe, W. P.: The Lesch-Nyhan Syndrome 129
Weinberger, S.: L-Asparaginase as an Antitumor Agent 143

Editorial 625

Short Communications

Abdulla, M. and *Haeger-Aronsen, Birgitta:* ALA-Dehydratase Activation by Zinc . 708
Antich, J.: see Sabater, J.
Epstein, F. H.: see Katz, A. I.
Goebel, K.-M.; Hausmann, L. and *Kaffarnik, H.:* Pancytopenia with Hemolytic Anemia in Glutathione Reductase Deficiency. *In vivo* and *in vitro* Studies with Riboflavin/FAD 375
Haeger-Aronsen, Birgitta: see Abdulla, M.
Hausmann, L.: see Goebel, K.-M.
Herzfeld, Annemarie and *Knox, W. E.:* The Distribution of Aspartate Aminotransferases in Normal and Neoplastic Rat and Mouse Tissues..... 699
Kaffarnik, H.: see Goebel, K.-M.
Katz, A. I. and *Epstein, F. H.:* Effect of Anions on Adenosine Triphosphatase of Kidney Tissue 499
Knox, W. E.: see Herzfeld, Annemarie
Knox, W. E.: see McGee, Margaret M.
McGee, Margaret M. and *Knox, W. E.:* Phosphate-Activated Isoenzymes of Glutaminase in Rat Liver and Kidney 618
Patelski, J.; Waligóra, Z.; Zgorzalewicz, B. and *Szulc, S.:* Effect of Staphylococcal α-Toxin and Different Proteins on Amino Acid Activation in the Aorta . 704
Puliol, M.: see Sabater, J.
Sabater, J. and *Puliol, Maria:* Enzymes of Erythrocyte Metabolism. Values Found in a Spanish Population 382
Sabater, J.; Puliol, M. and *Antich, J.:* Enzyme Determinations in Three Cases of Trisomy 18 Syndrome (Edwards' Syndrome) 508
Szulc, S.: see Patelski, J.
Waligóra, Z.: see Patelski, J.
Zgorzalewicz, B.: see Patelski, J.

Book Reviews 255, 622

News 624

Subject Index

Acid amyloglucosidase activity 647
Acid phosphatase 70, 257, 322, 449, 561
Acquired liver diseases 658
Acrylamide gel electrophoresis 340
Activation 124
Activator 578
Acute liver injury 161
Adaptation and previous diet 481
Adult 682
Adult and neoplastic rat tissues 88
Adult blood 426
Agar gel electrophoresis 180, 578
Alanine aminotransferase 578
Alkaline phosphatase 33, 70, 201, 226, 340, 402, 499, 561, 593, 606, 635
Alkaline phosphatase development 682
Alkaline phosphatase isoenzymes 76
Amino acid activation 704
L-Amino acid oxidase 688
δ-Aminolaevulinic acid dehydratase (ALAD) 708
Aminotransferase 329
Amphibian 578
Amylase 180
Anionic 578
Anions 499
Antitumor agent 143
Aorta 201, 273, 299, 674, 704
Arsenate 235
Ascorbate oxidation 626
Asparaginase 1
L-Asparaginase 143
Asparagine synthetase 143
Aspartate aminotransferase 578, 699
Aspartate aminotransferase isoenzymes 49, 529
ATP concentration 382
ATPase 499

Bacteria 70
Beef 458
Benzylhydrazine 124
Bile enzymes 242
Bile salts 269
Bilirubin 658
Bioassay 212
Bovine 41, 235
Brain 311
Brain tumour 467
Buffers 647

Calcium-polyphosphate interaction 499
Calf intestine adenosine deaminase 417
Calf serum adenosine deaminase 417
Cancer therapy 143
N-Carbobenzoxydiglycyl-L-arginine-2-naphtylamide (GGANA) 311
Carbonic anhydrase 33
Carbon tetrachloride injury 694
Carbon tetrachloride poisoning 242
Cartilage 41
Castration 273
Cathepsin D 322, 458
Cationic 578
Cell damage 242
Cell fractions 467
Cellogel electrophoresis 694
Cellulose acetate electrophoresis 226
Chick 513
Children 257
Cholesterol esterase 299
Cholesterol esterification 674
Chondroitinase 409
Chondroitinase activity 355, 362, 368
Chondroitin sulphate 409
Chondroitin sulphate, desulphated 362
Chondroitin sulphate, purified 362
Chondromucoprotein 41
Chromatography 368
Chronic administration 473
Collagen 322
Collagenase 647

Comparison 473
Creatine kinase 279
Creatine kinase isoenzymes 49
Cytosol 329, 529

Denatured serum 578
Denervation atrophy 578
Depolymerization 70
Dermatan sulphate 409
Developmental formation 1
Dihydrotachysterol 273
Disc electrophoresis 694
Diluted suspensions 433
Down's syndrome 340

EDTA 647
Edwards' syndrome 508
Electrophoresis 25, 49, 426
Embryonic development 279
Endopeptidase 458
Energetic metabolism 433
Enzymes 63, 513
Enzyme activity 219
Enzyme adaptation 473, 674
Enzyme chelation 606
Enzyme kinetics 219
Enzyme pattern 99, 161
Enzyme release 242
Erythrocytes 25, 289, 426
Erythrocyte enzymes 508
Erythrocyte metabolism 382
Estrogen 187
Ethanol 473
Experimental hepatitis 161
Experimental hypertension 674

Fetal 88
Fetus 279, 545, 682
Flavin adenine dinucleotide 375
Fluorimetry 212, 458
Fluorometry (micro-) 311
Fructose phosphate amidotransferase 537

Galactokinase 426
Galactose 513
Gel filtration 13, 458
Gilbert and Crigler-Najjar syndromes 658
Glucocorticoids 545
Gluconeogenesis 578
Glucosamine synthesis 537
Glucose-6-phosphate dehydrogenase 25, 289, 694
β-Glucuronidase 322, 658
Glucuronyl transferase 658
Glutaminase 618
Glutamine 88, 618
Glutamine synthetase 88, 235, 553
Glutathione reductase deficiency 375
Glutathione, reduced (GSH) 694
Glutamyltransferase 235
Guinea pig 63
Glycerate 513
Glycogen 647
Glycolysis 642

Hamster 322
Heart substrates concentration 481
Hemolytic anemia 375
Hepatitis 99
Histidine 329
Histidine ammonia-lyase 329
Hog 212
Hormone sensitive lipase 269
Human 212, 682
Human adult female 257
Human bile 593
Human liver mitochondria 574
Human serum 513, 593
Hyaluronic acid 409
Hyaluronidase 409
Hyaluronidase activity 355, 368
Hydrocortisone 1
Hydrolysis 41, 226
Hydrolysis of cholesterol esters 674
Hydroxypyruvate 513
Hypercholesterolemia 481
Hyperuricemia 129

Immunological determination 13
Inbred mouse strain 219
Induction 545
Inhibition 212, 269
Inhibitor 578
Isocarboxazid 124
Isoelectrofocusing 635
Isoenzymes 180, 226, 513, 545, 618, 682, 699

Isoenzymes of aminotransferases 578
Isoenzyme release 242
Isolated pancreatic islets 647

Kidney 187, 499
Kidney diseases 257
Kinetics 513
Kinetic control 385
Kinetic measurement 226
K_m 553

Lactate dehydrogenase 513
Lactate dehydrogenase isoenzymes 273, 467
Latent activity 626
Lead 63, 708
Lesch-Nyhan 129
Leukocytes 117, 289, 340, 642
Lipid-rich mitochondria 574
Lipolysis 269
Liver 1, 99, 124, 161, 187, 201, 242, 299, 513
Liver cell culture 545
Liver diseases 402, 529
Liver man 329
Liver substrates concentration 481
Liver tissue 402
Lysosomal enzymes 41
Lysosome 322

α_2-macroglobulin 13
Maltose 647
Mammals 99, 161
Man 76, 99, 161, 201, 279, 529
Marmoset monkey 99, 161
Mechanism of action 143
Meconium 682
Mental retardation 129
Metabolic effects of fructose 481
Metabolic study 593
Metaphosphate depolymerase 70
Method 235
Mg^{++} ATP binding 553
Microsomal enzymes 473
Mitochondria 329, 433, 529, 578
Molds 70
Mouse 329, 647
Multiple molecular forms aldolase 545
Muscle 49, 279
Muscle dystrophy 322, 578

NADP-linked enzymes 226
NADP oxidoreductase 289
Neonatal pathology 508
Neuraminidase sensitivity 340
Neuromuscular diseases 279
Neurospora crassa 688
Newborn 642
Nicotinamide adenine dinucleotide 226
Nicotinamide adenine dinucleotide phosphate 226
Nitroblue tetrazolium test 642
Non-collagen protein 322
Normal tissues 76
Nucleic acids 322
5-Nucleotidase 201
Nucleotide catabolism 481

Origin of mouse strain and enzyme level 219
Ornithine aminotransferase 187

Pancreatic effusion 13
Pancytopenia 375
Pentose phosphate shunt 289
Peptides 458
Phagocytosis 642
Phenobarbitone 473
L-Phenylalanine inhibition 340
Phenyl phosphatase 561
pH optimum 201
Phosphofructokinase 385
6-Phosphogluconate dehydrogeoase (6PGD) 289
Phosphoglycerate kinase 642
Phospholipase A 299
Pituitary 458
Placenta 606, 635
Plasma 41
Plasma proteins 117
Platinum electrode 688
Pleural fluids 13
Poisoning 63
Polarographic determination 688
Polyacrylamide disc electrophoresis 180
Polymorphonuclear leucocytes 41

Polyphosphates 499
Polyphosphates yeast 70
Progeria like syndrome 273
Progressive muscular dystrophy 49
Proliferative glomerulonephritis 257
Properties 187
Protein determination 574
Protein structure 385
Proteolytic activity 117
Purification 187, 553
Pyruvate kinase 642

Quaternary structure 385

Rana hexadactyla 578
Rat 1, 76, 124, 187, 311, 329
Rat liver 553
Rat Tissue 33, 537
Reductimetry 355, 362, 368
Regulation 385
Regulatory enzyme 606
Renin 212
Retina 235
Rheumatoid arthritis 41
Rivolavin 375

Saliva 180
Sex difference 1
Serum 49, 63, 99, 161, 529
Serum enzymes 508, 561
Skeletal muscle 578
Small intestine 682
Spectrophotometry 368
Split substrates attack 355
Spreading factor, bacterial 355, 362, 368
Spreading factor, testicular 355, 362, 368
Staphylococcal -toxin 704
Starch gel 426
Structure 433
Structure of mitochondria 626
Subcellular fractions 76, 402
Subunit 635

Thermal sensitivity 578
Threonine deaminase 385
Thyroid 201, 289
Thyroid stimulating hormone (TSH) 289
Tissue distribution 699
Tissue enzymes 180
Toxicity 513
Treatment 375
Trisomy 18, 508
Trypsin 13, 41, 311
Trypsin inhibition 311
Trypsin inhibitor 41
Trypsin-like activity 311
Tryptophan oxygenase 385
Tryptophan pyrrolase 124
Tumors 1, 76, 143, 537, 699
Tumor uptake 499
Typhoid fever 417

Ultramicroanalytical scale 433
Umbilical cord blood 426
Urine 180, 257
Urocanase 329

Variant 25
Vibrating electrode 688
Viral hepatitis 417

Zinc 708
Zinc deficiency 33
Zinc-independent metalloenzyme 606